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THE BACULUM IN THE WOOD RAT
NEOTOMA STEPHENSI

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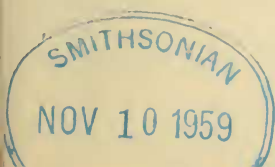
The wood rat *Neotoma stephensi* has frequently been confused with similar species, especially *Neotoma lepida*, *N. albigula*, and *N. mexicana*. Originally described as a species (Goldman, Proc. Biol. Soc. Wash., 18: 32, 1905), it was shortly thereafter designated as a subspecies of *N. lepida* (Goldman, No. Amer. Fauna, 31: 80, 1910). A decade later, the same author again regarded *stephensi* as a distinct species (Goldman, Jour. Mamm., 13: 66, 1932). More recent workers (Hooper, Miscell. Publ. Univ. Mich. Mus. Zool., 51: 35, 1941, and others) have intimated that *stephensi* was conspecific with *lepida*. The taxonomic status and characters of *N. stephensi* have thus been far from clear.

By employing a combination of characters, including color, hairiness of tail, and features of the skull, *N. stephensi* can be distinguished from *N. lepida*, *N. albigula*, and *N. mexicana*. Recent study of *N. stephensi* shows that its baculum is distinct from that of all other *Neotoma* and not only serves to distinguish this species from *lepida*, *albigula*, and *mexicana*, but clearly demonstrates its specific distinctness.

The baculum in *stephensi* is exclamation-mark-shaped or wedge-shaped (see fig. 1A). It is smaller than in any species known to occur in the United States. In one fully adult specimen the bone is 5.0 mm. long. In four young adults, the length is 4.1, 3.5, 3.1, and 3.1 mm., respectively. In an immature, the length is 2.4 mm. The bone in the immatures and young adults follows the basic plan of that in adult specimens. One adult has the baculum unusually broad along the proximal half, although still wedge-shaped. Its length is only 2.9 mm.

The baculum in *N. stephensi* is one-fifth the length of that in *lepida* and differs from it markedly in shape. The basal portion is much narrower than in *albigula* and of a different shape than in *mexicana*. It is of about the same size as in *Neotoma (Teanopus) phenax*, except the sides are not indented and thus not violin-shaped.

If, on the basis of the structure of the baculum alone, one were to estimate the relative taxonomic position of *N. stephensi*, the conclusion would be that it is nearest to *N. mexicana* and *N. phenax*. However, as



to which of these it is most closely allied, one should not judge solely on the basis of this evidence.

Fig. 1. Bacula of various species of *Neotoma*, all 4.2 *N. lepida*, UI no. 14499, Mohave Co., Arizona; *mexicana*, after Burt and Barkalow, Jour. Mamm., 23: 293, 1942; *stephensi*, UI no. 18682, Yavapai Co., Arizona; *phenax*, M.V.Z. no. 76182, Sinaloa, Mexico; *albigula*, UI no. 8554, Gila Co., Arizona.

